

ABSTRACT

Crosstalk between subscriber loops used to transmit different broadband services through the same bundled telephone cable is a significant limitation to providing digital subscriber line services. A method for estimating the crosstalk, identifying the sources of the crosstalk and predicting additional sources of crosstalk are disclosed. The crosstalk sources are identified in the frequency domain by maximizing the correlation with a "basis set" of received crosstalk PSDs which consist of the cascade of a finite set of known transmit PSDs types times a representative set of crosstalk couplings. Multiple crosstalk types are identified with a technique of successive spectral subtraction. This information can be used to perform crosstalk cancellation and spectrum management for DSL systems.